



THE MILE MARKER

A CALTRANS PERFORMANCE REPORT

2015 FIRST QUARTER ISSUE

In This Issue

***Mile Markers ♦ Performance Data ♦ SHOPP Report ♦ Bridge Health
Road Charge ♦ Napa Earthquake ♦ Traffic Management
North Coast Corridor Project ♦ Highway Safety ♦ Freight Mobility***

Caltrans mission is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

SPOTLIGHT

SAFETY

STEWARDSHIP/ SUSTAINABILITY

MOBILITY

FINANCIAL

Table of Contents

Mile Markers.....	3
The Caltrans Improvement Project.....	5
A Plan for Success.....	7
New Mission, New Vision and New Goals.....	8
Biennial SHOPP Report	9
Road Charge	11
Caltrans' Napa Earthquake Response	13
North Coast Corridor Project.....	17
Bridge Health	21
Traffic Management System Health	26
Highway Safety.....	29
Freight Mobility.....	31
Headquarters LED Project	33

The Mile Marker Purpose Statement

The purpose of the *Mile Marker* is to provide a transparent, plain-language accounting of Caltrans' performance.

On the cover – The Pacific Surfliner crosses the San Dieguito Lagoon in the city of Del Mar in San Diego County.

This page – The Pacific Surfliner leaves the Solano Beach Amtrak station.



MESSAGE FROM THE CALTRANS DIRECTOR

The size and complexity of Caltrans can make it difficult to communicate to all the transportation stakeholders what we're doing, and how well we are doing it. Those of us who have spent our careers working on improving transportation are used to technical jargon and acronyms. Additionally, we tend to allow information of relevance to our primary audience to get buried in a ton of data delivered in a cumbersome format.

For all of our transportation stakeholders, this has not conveyed information effectively, nor has it raised confidence that their state transportation department is investing wisely and efficiently. This lack of effective communication is a lost opportunity to inform them on issues that affect them and on how their tax dollars are being used. As a government department that touches the lives of nearly everyone in the state every day, it is incumbent on us to provide factual information in a narrative that is easily understandable. This narrative needs to include the timely reporting on relevant performance measures that are meaningful to the users of the system.

I hope you will find this report an antidote to that problem. In it, we try to explain in everyday language what it takes to operate and maintain the multifaceted transportation system of the world's eighth-largest economy.

I also want to shine a light on the way we make decisions. What measurements do we rely on to determine when a particular project is needed? How do we know if we're doing a good job? Read on, I think you'll find a lot of answers.

As you might imagine, we gather a lot of information about the transportation system entrusted to us. Every time a conductor scans your ticket on a state-operated Amtrak line, we learn more about the number of people who find rail travel convenient and when they are most likely to use it. When you pass over a highway sensor we learn more about the experience people are having during their commutes, and how long it takes to get goods from our ports to the shelves of our markets.

We naturally have goals for the condition and operation of the California transportation system. Some of them we set for ourselves, and others are enacted by law or by an order from the governor.









In this report, we lay out those goals and we tell you whether we've met them. I doubt you'll be surprised that we don't always meet our goals. If we did, frankly, it would mean we had set them too low.

If you have thoughts and suggestions about this report, or about your experience travelling the Golden State, I'd like to hear from you.

A handwritten signature in black ink, appearing to read "Malcolm Dougherty".

Malcolm Dougherty
Director of Caltrans

CALTRANS MILE MARKERS

Performance Measure	Previous Period	Current Period	Goal	Goal Met	Five-Year Trend (Unless otherwise noted)	Desired Trend
SAFETY						
Number of fatal accidents in calendar year 2012, on the state highway system, for every 100 million vehicle miles traveled.	0.66	0.61	Less than 1.0	✓		↓
Number of work-related injuries and illnesses in calendar year 2014, per 200,000 employee hours.	7.20	7.29	5.58	—		↓
MOBILITY						
Total train and bus revenue for federal fiscal year 2014.	\$137.3M	\$141.0M	\$146.2M	—		↑
Ridership (in millions) for federal fiscal year 2014.	5.6	5.3	5.5	—		↑
STEWARDSHIP/SUSTAINABILITY						
Percent of Caltrans' contracts and procurements that went to small businesses in fiscal year 2013–14.	21.6	28.24	25	✓		↑
Percentage of Caltrans' contracts and procurements that went to disabled veteran business enterprises in fiscal year 2013–14.	1.96	3.79	5	—		↑
Percentage of Caltrans' asphalt pavement that used waste tires in calendar year 2013.	29.2	22.9	35	—		↑
Percentage of alternative fuels used in the Caltrans fleet in fiscal year 2013–14.	29	27.2	30	—		↑

Note: Mile Marker performance measures are based on the latest available data for each category. Different categories, however, reflect different time periods. Some measures align with federal fiscal years, some with state fiscal years, and others at various intervals. Level-of-service data, for example, is gathered between March and September and reported at the end of the calendar year. The distinctions in these time frames are labeled accordingly.

Mile Markers Legend



Goal Met

Goal Not Met

Data that is gray had no change since last report, August 2014

Performance Measure	Previous Period	Current Period	Goal	Goal Met	Five-Year Trend (Unless otherwise noted)	Desired Trend
DELIVERY						
Percentage of planned projects delivered on schedule and ready for construction in fiscal year 2013–14.	98	98	100	—		↑
Percentage of projects requiring additional funds beyond their allocated budgets for fiscal year 2013–14.	3.3	2.7	Less than 5.0	✓		↓
Percentage of planned project approval/environmental documents delivered in fiscal year 2013–14.	88	88	90	—		↑
MAINTENANCE						
The 2014 overall maintenance roadway service score, on a scale of 0–100, with 100 being the best.	85	84	87	—		↑
Percentage of state highway system pavement that was healthy in the 2013 Pavement Condition Survey. Caltrans' goal is expected to be reached by 2023.	75	84	90	—		↑
Overall condition of California's bridges in fiscal year 2013–14, on a scale of 0–100, with 100 being the best.	95.6	96.3	94	✓		↑
Percentage of Caltrans' vehicle detectors that were "good" or functioning properly in calendar year 2014.	66.6	64.3	90.0	—		↑
Level-of-service score for highway litter and debris collected statewide for 2014.	84	84	80	✓		↑
Percentage of Caltrans' fleet that was in ready-to-use condition in fiscal year 2013–14.	69	83	90	—		↑

The Goal is Simple: To Be the Best



The Caltrans Improvement Project is exactly what the name implies.

Called for by Governor Brown, the Caltrans Improvement Project is an enterprise-wide, multi-year reform effort in response to an external report from the State Smart Transportation Initiative, an academic institute out of the University of Madison, Wisconsin, made up of respected State DOT Directors and Transportation Academics from across the country.

The goal of this project is as straightforward as it is ambitious: to make Caltrans the best department of transportation in the nation.

The first significant change came last September, with the creation of a new mission, vision and goals for Caltrans. These new tenets provide direction for all of Caltrans' programs, and form the strong foundation on which CIP is building.

The chief purpose of the new mission vision and goals was to diversify the purpose and effect of Caltrans and reflect a more comprehensive approach to serving Californians.

In addition to the long-held goals of safety and mobility, now economy, livability, and sustainability are integrated into everything that the department does.

In today's world, Caltrans focuses on much more than just auto mobility, vehicle throughput or level of service for individual vehicles. California has changed, and is changing still. This process will help Caltrans adapt and evolve to better meet the diverse needs of California's traveling public. We're redefining success to make sure our work enhances communities and efficiently moves people and goods.

We are more focused than ever on multi-modalism, transit and active transportation as solutions to our collective transportation challenge.

For more information about the Caltrans Improvement Project: visit www.dot.ca.gov/cip



For example, Caltrans is helping administer two programs that fund existing low carbon transit operators and intercity and rail capital improvements, through cap and trade auction proceeds

Caltrans is also administering the new and popular Active Transportation Program, whose demand is far outstripping its supply. It has already provided hundreds of millions of dollars to projects all over the state.

Whether you use your feet, bike peddles, public transit, or a car to get where you want to go, Caltrans is supporting your choice.

Because we know that incorporating all of these components is the only way to ensure a sustainable and responsible transportation system that can balance the needs of the environment and the economy. We're endeavoring for a greener transportation system.

By supporting modal choice, along with instituting new programs and operational practices, Caltrans is committing itself to sustainability.

Sustainability means paying due attention to our people, our collective prosperity, and, most of all, our planet. We cannot prosper, we cannot stay healthy, and we cannot protect our planet without taking sustainability seriously.

In our state, 38 percent of our carbon emissions come from the transportation sector, according to Air Resources Board. So attaining our clean air goals will inevitably involve a transformed transportation system.

Times and system users' needs and priorities have changed. The residents of California value sustainability as well as mobility; better access to destinations through connectivity and integration between modes, and choices for mobility; and safety across all modes they may choose to use.

Residents want to easily move around their home state, but they also want their home state's environment to remain healthy, and for its beauty and bounty to be around for their progeny and theirs.

This process is helping Caltrans adapt and evolve to these new needs and priorities, putting in the elbow grease to buff it out and realign its efforts with the expectations the traveling public specifically, and the populace of California in general.

Leading this comprehensive effort is a Strategic Direction Group co-chaired by California Transportation Agency Secretary Brian Kelly and Caltrans Director Malcolm Dougherty. Aided by a project manager, there is a working group for each of the five key aspects of reform: Performance Management and Human Resources; Smart Investment and Resource Alignment; Strategic Partnerships; Innovation, Flexibility and Risk Management; and Communication.





A Plan for Success

A fresh and appropriate strategic plan is crucial to our success.

Millions of people rely on California's transportation system every day. Meeting their needs is the reason we exist as an organization – it is our Mission.

And we have something very specific in mind when we talk about our Mission, our Vision, and our Goals.

Our Mission is to “Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.”

A lot of thought has gone into that Mission Statement. It is packed tight with meaning. And if you look closely, you'll notice that it has two parts.

The first part about providing “a safe, sustainable, integrated and efficient transportation system” is what we do.

The second part, “to enhance California's economy and livability” is why we do it.

Every one of our nearly 20,000 employees is a public servant with a mission to fulfill, and we all are proud of that.

Our Vision Statement speaks in more specific terms of our aspirations. It tells what kind of department we want to be. It is this: “A performance-driven, transparent and accountable organization that values its people, resources, and partners, and meets new challenges through leadership, innovation and teamwork.”

We have Goals to meet as we fulfill our Mission and realize our Vision. Those goals, as you see laid out with specific meaning on the next page, are:

- **Safety and Health**
- **Stewardship and Efficiency**
- **Sustainability, Livability and Economy**
- **System Performance**
- **Organizational Excellence**

We stand firmly with our Mission, Vision and Goals. But declaring them is not enough. We must measure our progress along the way. To do that, we must establish very specific data-based performance measures, and encapsulate them in a strategic plan.

A fresh and appropriate strategic plan is crucial to our success.

The 2015-2020 Caltrans Strategic Management Plan (SMP) is currently in its final draft phase. Targets for individual performance measures are being developed to help the Department create a precise mechanism for achieving measurable progress. Once these final targets have been identified, the SMP document will go to the Caltrans Executive Board for review.

Once the Executive Board provides a final review, mid-to-late March 2015, the document will undergo final revision by the SMP team. The final document is anticipated to be released in early April 2015.

In our next Mile Marker, we will elaborate on the new Caltrans Strategic Management Plan, and explain how it will guide us forward to excellence.



Our Mission

Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

Safety and Health

Provide a safe transportation system for workers and users, and promote health through active transportation and reduced pollution in communities.

Stewardship and Efficiency

Money counts. Responsibly manage California's transportation-related assets.

Sustainability, Livability and Economy

Make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.

System Performance

Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers.

Organizational Excellence

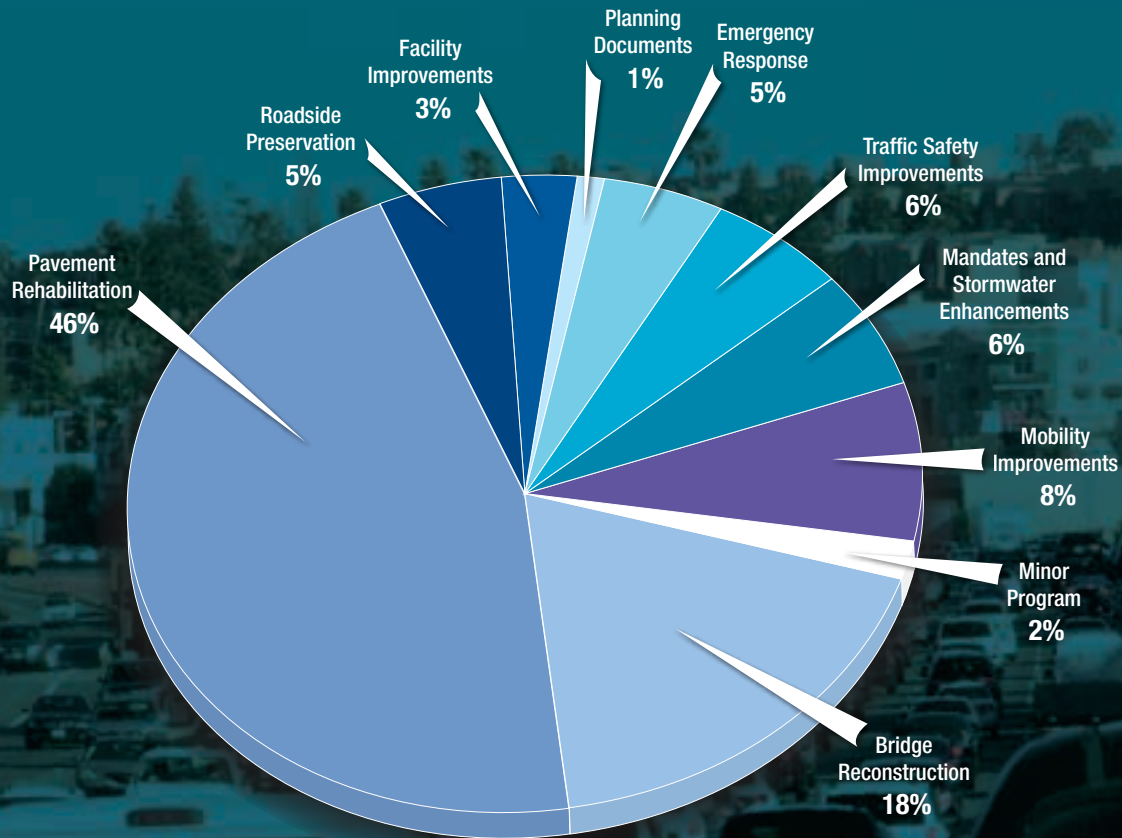
Be a national leader in delivering quality service through excellent employee performance, public communication, and accountability.

Our Vision

A performance-driven, transparent and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork

Integrity ■ Commitment ■ Teamwork ■ Innovation

Maintaining the State Highway System with Diminishing Funds



This pie chart highlights the SHOPP rehabilitation and reconstruction funding needs, in percentages. Nearly two-thirds of the demand is for pavement rehabilitation and for bridges that need repair.

Caltrans maintains and operates:

- 50,000 lane-miles of state highways and roadways.
- 13,000 bridges.
- 205,000 culverts and drainage facilities.
- 87 roadside rest areas.
- 30,000 acres of roadside landscaping.
- 180,000 acres of nonlandscaped roadside.
- Maintenance stations, equipment shops, office buildings, and materials laboratories and testing facilities.

The State Highway Operation and Protection Program

The days of rapid and dramatic highway expansion are over. Today, the focus is on maintaining and improving the existing system. Well-maintained transportation systems reduce congestion and travelers' vehicle maintenance costs.

The State Highway Operation and Protection Program (SHOPP) funds are committed to rehabilitation and operational improvements. The SHOPP preserves the existing highway

system and its supporting infrastructure. The ever-increasing demands of vehicles and trucks hauling freight on an aging system causes deterioration that requires major rehabilitation and reconstruction. Our large and aging highway system — the heart of California's \$2-trillion economy — needs \$8.2 billion annually for rehabilitation and reconstruction. This far exceeds the \$2.3 billion available each year, leaving \$5.9 billion unfunded every year.

Rehabilitation and Reconstruction Funding Needs		
Estimates from the 2013 10-Year SHOPP Plan		
Type	Category	Total annual need in millions
Nondiscretionary	Emergency response	\$397
	Traffic safety improvement	\$495
	Mandates and stormwater enhancements	\$488
Discretionary	Mobility improvement	\$631
	Minor program	\$172
	Bridge reconstruction	\$1,490
	Pavement rehabilitation	\$3,786
	Roadside preservation	\$387
	Facility improvement	\$206
	Planning documents	\$118
Total escalated cost		\$8,200

Caltrans is currently updating cost estimates for the annual efforts to preserve the existing state highway system. These updates are expected to be complete in May 2015.

SHOPP funding is limited, and many well-deserving and much-needed major pavement, bridge rehabilitation and mobility projects must be delayed as a result. Selecting which projects can't wait means setting priorities. The highest priority is the "must do" nondiscretionary work such as emergency response, traffic safety improvements, Americans with Disability Act improvements, and stormwater enhancements. The next priority is discretionary work such as pavement rehabilitation, bridge reconstruction followed by minor program or projects under \$1 million, facility improvements and mobility enhancements.

Caltrans delivers most SHOPP projects based on statewide needs. No geographic formula or set percentage determines how and where we select

and fund projects. We use periodic statewide highway system inspections and technical advisors in our districts and headquarters to determine where best to carry out projects.

Looking forward, Caltrans is transitioning to manage the SHOPP as part of an overall asset management plan. As part of this change, we are updating our SHOPP project selection process. Our updated methods will incorporate criteria that tie to our new mission statement and will best use our limited SHOPP funds. It will also help us carry out the requirements of the [Moving Ahead for Progress in the 21st Century Act](#) and some of the State Smart Transportation Initiative [report's January 2014 recommendations](#).

Source: Division of Budgets, Division of Transportation Programming, and the Division of Maintenance

Exploring an Alternative to the Gas Tax

California's \$2-trillion economy – the eighth largest in the world – depends on an equally massive transportation system. Its highway lanes alone, if laid end-to-end, would wrap twice around the equator.

The system, of course, is more than lane miles. It includes roads, bridges, public transit vehicles and facilities, passenger and freight rail, airports, harbors, and international ports of entry. Our state and local transportation infrastructure faces great demands:

- 326 billion annual vehicle miles traveled
- 394,000 lane-miles to operate and maintain
- More than 26,000 bridges to operate and maintain
- 33 million registered vehicles
- 38 million people

California Base Excise Tax 1994-2013



California thrives on its transportation infrastructure. There could be no economy without it. And yet, much of the upkeep it needs is postponed from year to year for lack of money.

Transportation Funding Not Keeping Pace with Demand

The largest sources of funding for the transportation system are the fixed excise taxes paid on fuel consumption; federal funds also from fuel taxes; and weight fees on trucks. Collectively, these funds are primarily used for Caltrans' two major programs: the State Highway Operation and Protection Program (SHOPP) and the State Transportation Improvement Program (STIP). The SHOPP funds are used for state highway system rehabilitation and maintenance, while STIP funds are used for expansion and modernization. A portion of these funds support local road needs that benefit pedestrians, bicyclists and transit.

Effect of Inflation

This graphic shows the erosion of the buying power of the base excise tax, which is fixed at 18 cents and has not been raised since 1994. This is our primary source of revenue used to maintain and rehabilitate our roadways.

This funding, however, has not kept pace with the demands placed on our transportation infrastructure. This underfunding has led to the decay of one of California's greatest assets: the entire roadway network. The problem is mainly due to four factors: aging infrastructure, inflationary pressure on revenue, increased construction costs and greater vehicle fuel efficiency.

Where We Are Today

The current transportation tax structure has been in place since the early 20th century. This was a great proxy for roadway use for the last 80 years, but fuel efficiency and alternative fuels are increasing, and the existing tax structure is becoming functionally obsolete. This is an evolutionary change the transportation industry must address.

On September 29, 2014, Gov. Edmund G. Brown Jr. signed into law Senate Bill 1077 "Vehicles: Road Usage Charge Pilot Program." The bill requires California to study a road charge as an alternative to the current gasoline tax structure. By definition, a road charge is a policy whereby motorists pay for the use of the roadway network based on the distance they travel instead of the amount of fuel they consume.

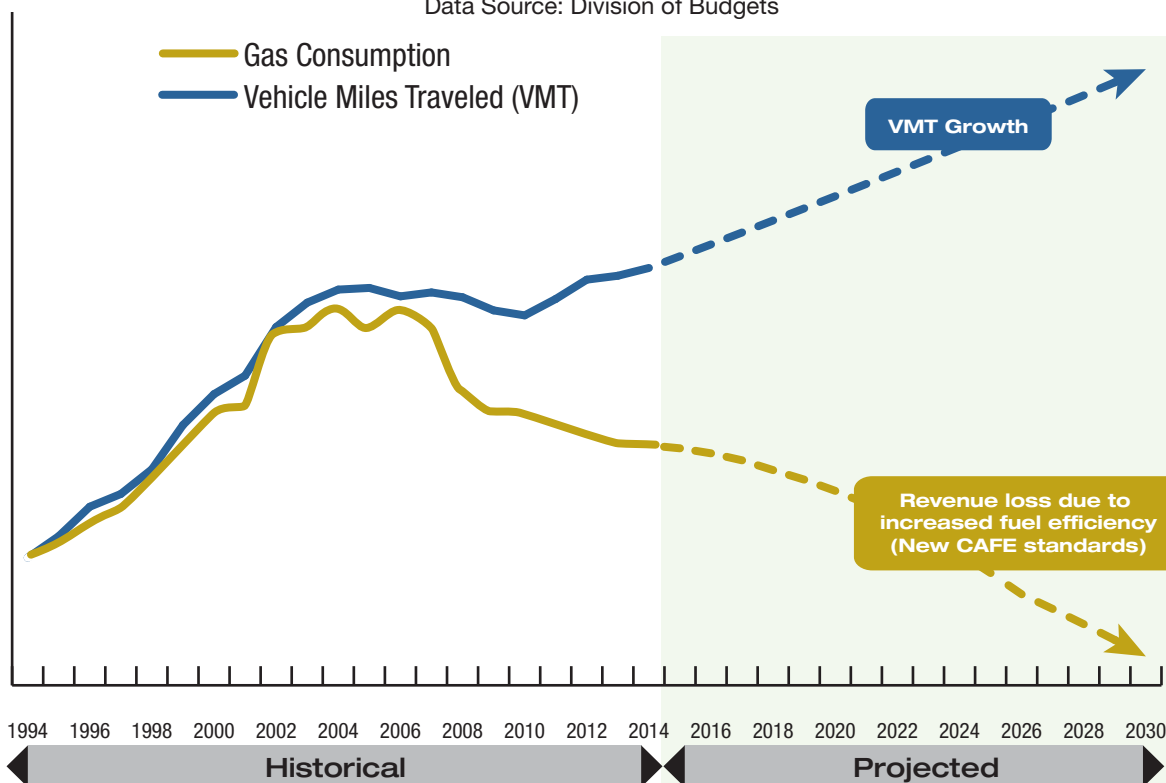
The legislation requires the creation of a 15-member road charge technical advisory committee. The committee's purpose is to guide the development and evaluation of the pilot program, study road charge alternatives to the gas tax, and gather input from a broad range of relevant stakeholders and the public. The first technical advisory committee meeting was held on January 23, 2015. The pilot program, which will identify and evaluate issues related to a road charge program in California, is required to begin by January 1, 2017. This does not mean California is changing its current transportation tax structure, but rather the state is researching the viability of a mileage-based system. During the pilot no money will be exchanged, and all participants will continue to pay gasoline-related taxes the way they do today, at the pump.

We expect critical questions to be answered through the pilot process, such as cost, privacy, jurisdictional issues, feasibility, complexity, acceptance, use of revenues, security and compliance, data collection technology, potential for additional driver services, and implementation issues. This information will be reported to the legislature, which will then determine whether a road charge is the right alternative to replace the gas tax.

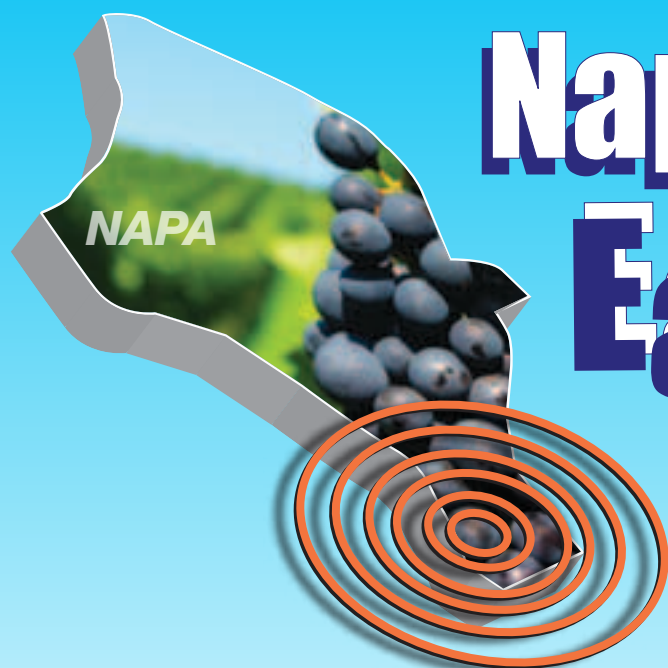
Source: Division of Budgets

REVENUE LOSS Due to Increased Fuel Efficiency

Data Source: Division of Budgets



CAFE standards- Corporate Average Fuel Economy



Napa Earthquake

A Snapshot of Caltrans' Emergency Response

3:20 a.m. Sunday, August 24, 2014, magnitude 6.0 earthquake

Governor's Office of Emergency Services issues an alert to all state and local agencies.

3:31 a.m.: Caltrans receives ShakeCast notifications, which are expected about 10 minutes after a seismic event.

3:38 a.m.: Traffic Management Center begins phone calls to mobilize first responders.

5 a.m.: Caltrans staff are in place at the Office of Emergency Services Operations Center in Sacramento.

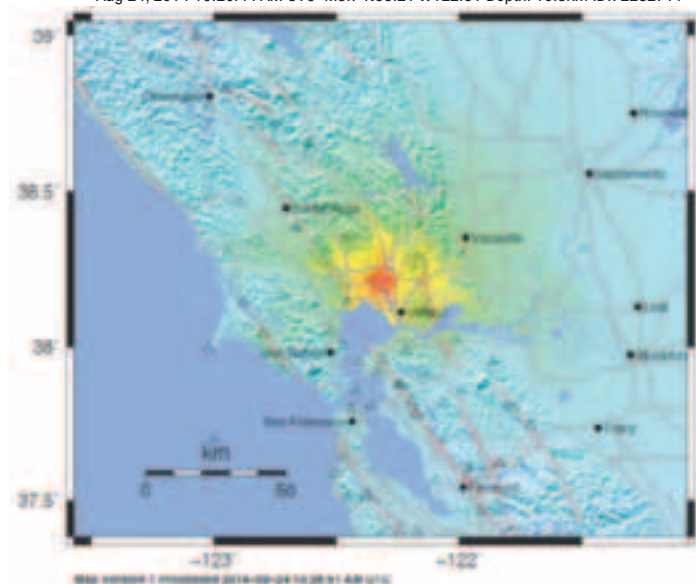
5 a.m.: State Operations Center gathers reports from the California Highway Patrol.

ShakeCast: A Valuable Tool in Caltrans' Earthquake Response

ShakeCast is a real-time alert that provides first responders with notifications and information immediately following earthquakes and helps direct and prioritize emergency bridge and building inspections. ShakeCast, developed through Caltrans research with the U.S. Geological Survey, uses a combination of ShakeMaps and Caltrans bridge data to identify the bridges most likely to have sustained damage in the stronger shaking zones. Caltrans has used the ShakeCast/ShakeMap systems, available through the USGS, since 2008. ShakeMaps plot the regional distribution of strong ground shaking based on data from thousands of seismic sensors statewide.

This was the first time Caltrans used ShakeCast to identify and inspect quake-damaged transportation-related buildings. Because this feature of the system was still in test mode, email notifications about the buildings were not sent out to Caltrans first responders, as they were for the bridges, but information gleaned from the monitors was shared with local building inspectors in the weeks that followed.

CISN ShakeMap: 6.7 km (4.2mi) NW of American Canyon, CA.
Aug 24, 2014 10:20:44 AM UTC M5.7 N38.21 W122.31 Depth: 10.8km ID:72282711



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.1	0.5	2.4	6.7	13	24	44	83	>156
PEAK VEL.(cm/s)	<0.07	0.4	1.9	5.8	11	22	43	83	>160
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

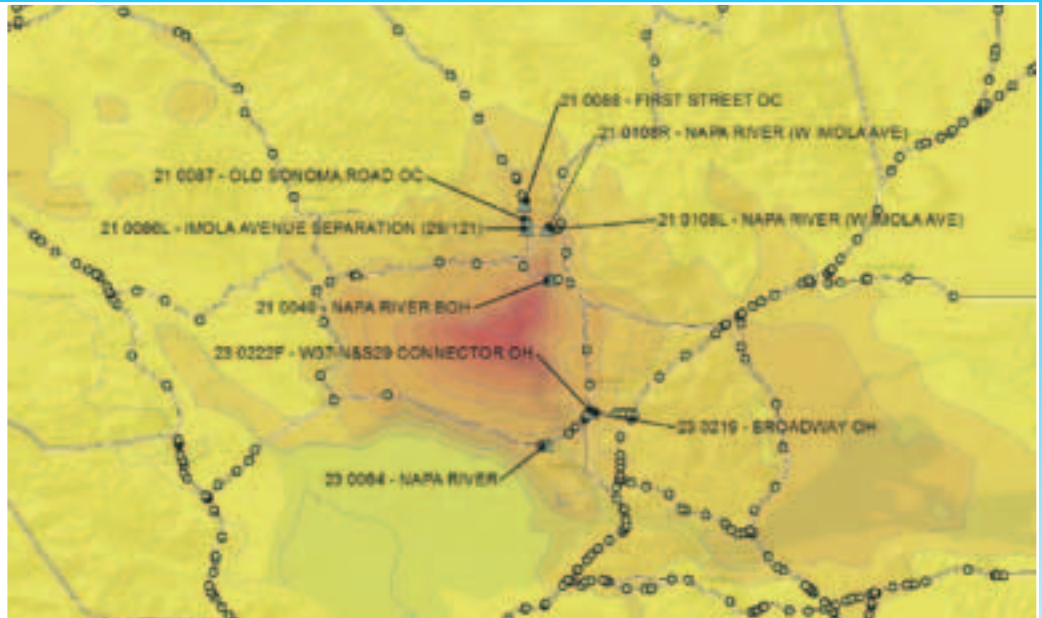
The epicenter of the Napa Earthquake is marked with a star in the image above. The yellow area shows the spread of the shaking. Note that Vallejo was in an area where people would feel a powerful jolt, but where significant damage would be unlikely. Caltrans uses such data to determine which highway structures need to be inspected, and in what order.

Map Legend

● **Green Circles** – locations of state bridges on the state highway system.

▲ **Green Triangles** – locations of state bridges where damage was observed during initial inspections. Labels show the state bridge number (e.g. 21 0087) and the bridge name.

Circles in the image right represent bridges on the state highway system, and triangles represent bridges that showed some damage during the initial inspections. Powerful shaking, shown as darker shades of yellow and orange, were concentrated away from the highway system.



—largest seismic event in the Bay Area since 1989's Loma Prieta.

6 a.m.: Caltrans activates an Emergency Department Operations Center in its Sacramento headquarters building. Review of initial assessments begins.

7 a.m.: Caltrans activates an Emergency Operations Center in District 4, in which the quake occurred. Local personnel continue assessments and coordinate in-field activities.

2 p.m.: District 4 Emergency Operations Center completes damage assessment and provides resource needs to address repairs and further inspections. Ongoing communication is turned over to the District 4 Traffic Management Center and Maintenance management.

4 p.m.: Department Operations Center deactivated.

Assessing the Damage

Immediately after the earthquake, our Bay Area maintenance crews began checking the state highway system to make sure roads and bridges could be safely driven. Our bridge engineers checked state highway bridges in Napa County for damage during the first 48 hours after the earthquake. In all our inspectors completed emergency inspections of 47 state-owned bridges in Napa, Solano, and Contra Costa counties. This included structures on State Routes 37, 29, 121, and 221 in Napa County, Route 37 in Solano County, and Route 4 in Contra Costa County. Inspectors found cracked and flaked concrete, minor settlement and evidence of movement in some abutments, but the damage was considered minor, and all structures remained open to the public. In the following months nine emergency contracts totaling \$6 million, mostly to repair bridge damage, were completed on 11 state-owned bridges on Routes 29, 37, and 121 in Napa and Solano Counties.

Our bridge engineers also inspected all seven state-owned Bay Area toll bridges and found no damage on any of those structures. At the request of Napa County, our engineers also inspected

all 104 locally owned bridges in the county, and one of those bridges was closed due to damage caused by the earthquake.

Partnering with Our Local Agencies

The August 24 earthquake showed the importance of coordination and cooperation among government agencies. Cities and counties often do not have the number of trained staff they need to assess damage after a severe earthquake, such as the one that struck Napa County.

The Safety Assessment Program, run by the Governor's Office of Emergency Services, draws upon the expertise of professional engineers, architects, and certified building inspectors to help local governments evaluate building safety after a disaster. Caltrans engineers working under the state's Safety Assessment Program inspected buildings in the city. Eight of our inspectors were deployed to Vallejo in Contra Costa County to help the city inspect more than 40,000 buildings for damage. The teams inspected everything from the city's sprawling wastewater treatment plant to a local police station.



Caltrans also worked closely with the California Highway Patrol and local and regional transportation agencies to make sure transportation systems remained open. Our maintenance staff worked with the Governor's Office of Emergency Services to provide the California Earthquake Clearinghouse with office space, computers, and phones at our Napa Maintenance Station. We also worked closely with the region to provide help and support as they dealt with the aftermath of the earthquake, and to identify damage locations eligible for federal highway emergency funding.

Lowell Duncan of the Caltrans Napa Maintenance Crew chips loose concrete from the Maxwell Bridge on Highway 121 in Napa following the August 24, 2014, earthquake. The cowboy-style hard hat he is wearing is one of two Caltrans-authorized hard hat designs, with the other being the standard style. Caltrans provides only standard-style hard hats. Employees who wish to wear the authorized western cowboy hard hats must purchase their own.

Seismic Retrofit Program

Caltrans started its first bridge *seismic safety retrofit* program in 1971 after the San Fernando earthquake damaged several bridges. The initial seismic program was completed in 1989. That same year, the Loma Prieta earthquake in the San Francisco Bay region caused catastrophic bridge failures. In response, we established our nearly completed seismic retrofit program. After the Loma Prieta earthquake, we identified 1,039 state owned bridges as needing seismic retrofit,

and after the 1994 Northridge earthquake in the Los Angeles area, we identified an additional 1,155 bridges that were added to the program. The nine state-owned toll bridges were also strengthened as part of the state retrofit program.

Of the more than 2,100 bridges identified as needing seismic strengthening, all but one, the Shuyler Heim Bridge in Long Beach, have been completed. Seismic safety will be achieved at Shuyler Heim when traffic is switched off the old bridge this summer onto the first stage of the newly constructed bridge.

Seismic design innovations continue to drive the bridge program as we continually reassess our design methods to incorporate what we learn from past earthquakes and from advancements in seismic and structural engineering. We design our bridges to meet or exceed a “No Collapse” performance objective when subjected to ground shaking intensities expected to be generated by an earthquake with a 1000-year reoccurrence interval. While collapse is unlikely, significant

damage is anticipated at bridges located near the earthquake epicenter. In fact, many bridges will likely need to be replaced after a large event. Select bridges, determined to be essential for emergency response, have been designed or retrofitted to a higher standard than “No Collapse.” These bridges are expected to be serviceable or immediately repairable following a large earthquake.

Caltrans has long been acknowledged as a leader in seismic preparedness, an expertise born of necessity and honed through experience. Government agencies around the world routinely seek guidance on seismic design and retrofitting. Our engineers regularly share their knowledge through seminars and consultations. They also learn from the experience of their peers in other countries facing the same challenges. Applying the latest advancements in seismic science is a process that will never end.

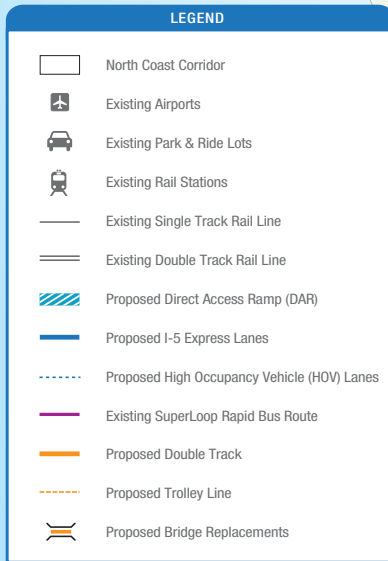
Source: Caltrans District 4 and the Divisions of Traffic Operations, Maintenance, Construction, Engineering Services, and Research, Innovation, and System Information

The Napa earthquake loosened some of the concrete from the abutment at the Maxwell Bridge on Highway 121 in Napa. Walter Cesario of the Caltrans Napa Maintenance Crew removes a large piece of concrete from the damaged bridge.



Partnership

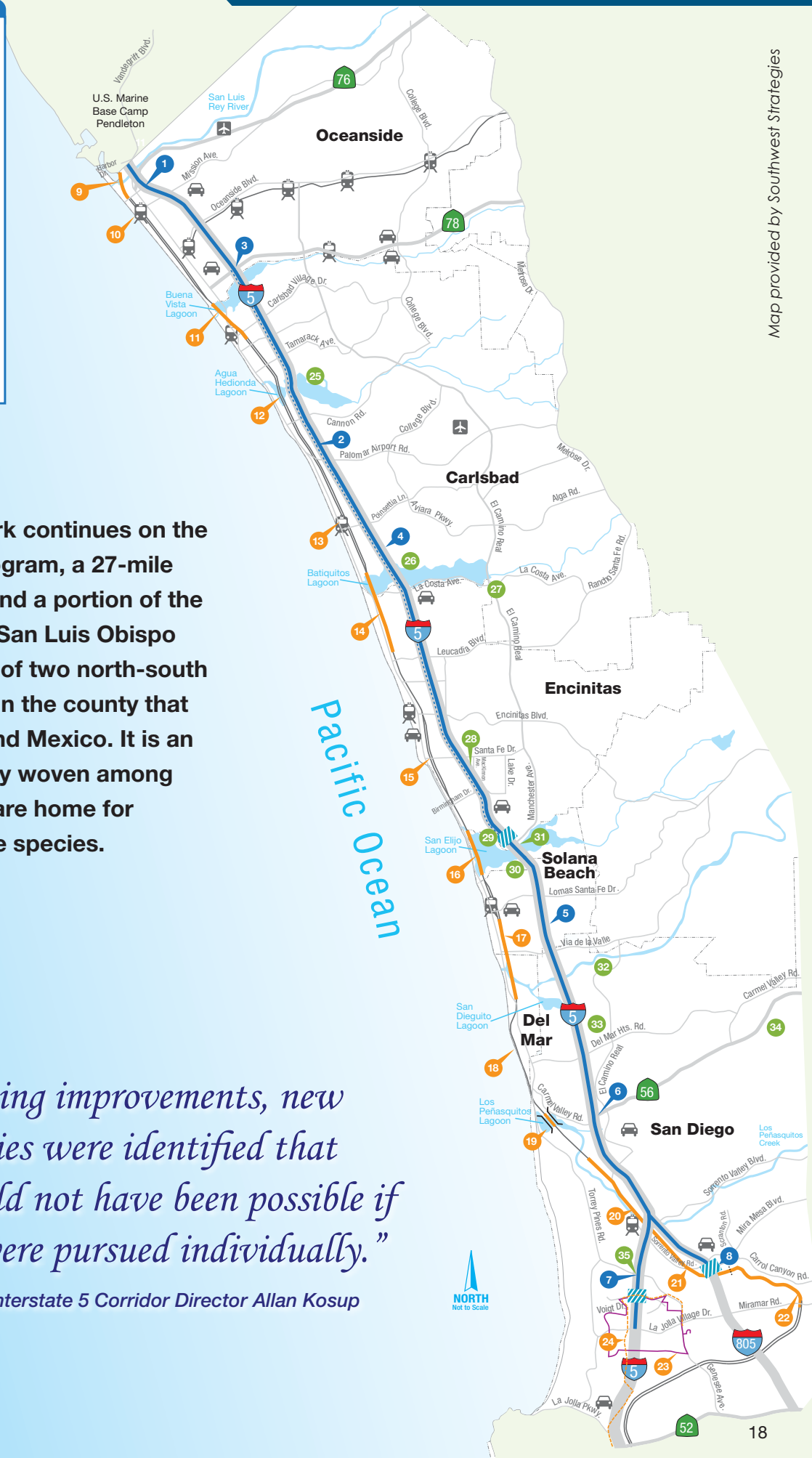
The Foundation for Innovative Improvements in San Diego



In San Diego County, work continues on the North Coast Corridor Program, a 27-mile overhaul of Interstate 5 and a portion of the Los Angeles–San Diego–San Luis Obispo Rail Corridor. This is one of two north-south transportation corridors in the county that links the United States and Mexico. It is an economic lifeline carefully woven among six coastal lagoons that are home for endangered and sensitive species.

“By integrating improvements, new opportunities were identified that otherwise would not have been possible if the projects were pursued individually.”

Caltrans District 11 Interstate 5 Corridor Director Allan Kosup



With project approvals now in place, the team is eager to begin construction in 2015. Similar to the integrated planning approach, the first construction project will be a \$500 million project made up of lagoon, rail, and highway improvements. Caltrans will administer the contract, and the project should be open to traffic by 2018.

The project's sensitive location and the need to maintain and enhance coastal access required oversight by the California Coastal Commission. Caltrans' San Diego office, the San Diego Association of Governments, commonly called SANDAG, and the California Coastal Commission worked together to present a balanced transportation improvement project consisting of freeway, rail, and active transportation elements as well as habitat and coastal access enhancements.

The \$6 billion package preserves several hundred acres of natural habitat. The early stages of the program focus on rail improvements to make rail travel a more competitive option to heavily congested I-5. Bicycle and pedestrian facilities on freeway bridge overpasses will be improved, and

express/managed lanes on I-5 will be constructed. The toll fees, which will be generated through a FasTrak program, will be reinvested in transit projects in the corridor. This will allow the region to continue offering travelers transportation options.

"By integrating improvements, new opportunities were identified that otherwise would not have been possible if the projects were pursued individually," said Caltrans District 11 Interstate 5 Corridor Director Allan Kosup.

"Caltrans is confronted with the need to modernize our statewide transportation network while reducing the environmental impact of increasing capacity to match travel demand," he said. "Caltrans and SANDAG translated these challenges into opportunities."

The program's planning and coastal permitting process culminated August 2013 when the California Coastal Commissioners unanimously approved the North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program. The public works plan and enhancement program



is a long-term vision for mobility and environmental sustainability in the corridor. It acts as both the [North Coast Corridor Program's](#) master planning document and coastal permitting process. The public works plan streamlines a more traditional process that would have resulted in more than 80 separate Coastal Commission actions.

The North Coast Corridor Program is a historic approach to infrastructure and resource planning, in both the issues it addresses and the way it was conceived and developed. The public works plan and enhancement program's vision is one of balance, integration, and performance. The document includes performance reporting every four years to make sure project plans align with the needs of the region. This creates flexibility and accountability — further allowing Caltrans and SANDAG to respond to current needs in the corridor and future changes in land use, revenue, technology, and the environment.

This integrated, collaborative approach also resulted in several opportunities that will benefit coastal resources. One example is a part of the freeway widening where Caltrans needed to

replace the six I-5 lagoon bridges. Those bridges were constructed in the 1960s without the full understanding of how the bridge lengths would affect tidal flushing of the lagoons. As a part of the corridor program, Caltrans and SANDAG agreed to study lagoon bridge length and its effect on tidal flow. Together, they decided that three of the lagoons would benefit from longer I-5 bridges. In addition to longer bridges, improved bike and pedestrian facilities were incorporated into several bridge and retaining wall designs. These coastal resource enhancements would not have happened without Caltrans and SANDAG working together and including ideas from other project stakeholders.

“Without a doubt, the North Coast Corridor Program has ushered in a new generation for the department,” said Caltrans District 11 Director Laurie Berman. “Future projects will reflect the understanding that improved mobility is larger than a freeway. Coupling dynamic improvements in vehicular travel with increased rail options and better pedestrian and bike connections will be the rule of thumb rather than the exception.”

Source: Caltrans District 11

Preserving and enhancing the natural environment is a critical part of the I-5 North Coast Corridor at the San Elijo Lagoon



Photo provided by Southwest Strategies

Caltrans bridge inspectors use a unique method to access Sacramento County's Tower Bridge from the water. This method uses a barge anchored under the spans with lift equipment operated from the barge to gain hands-on access to the bridge. This method causes no traffic delays during the inspection.

Value and Cost of California's Bridges

Bridges are a tremendously important and enormously expensive component of California's transportation network. Replacing the 13,000 bridges on California's state highway system would be a task of unprecedented scope and would cost an estimated \$57 billion.

Simply inspecting and maintaining California's bridges costs nearly half a billion dollars every year. And that does not include millions more spent to inspect the many thousands of bridges, large and small, that belong to local governments and agencies.

Size of the Challenge

State-owned bridges alone – excluding locally owned bridges — support more than 250 million square feet of deck — a surface area equal to about 4,350 football fields. To keep the state’s transportation system reliable, Caltrans constantly maintains, rehabilitates, and when necessary, replaces bridges. Each bridge is uniquely designed using a variety of construction materials and subject to diverse environmental and operational conditions. Managing a network of such varied bridges is challenging, so Caltrans uses performance measures that show how well it cares for state-owned bridge assets.

Preservation funding and sound management practices are reflected in the improving bridge performance measures detailed in this report. But even in the backdrop of recent improvement, there are billions of dollars of unaddressed bridge needs. These unfunded needs include strengthening of bridges for load, upgrading of bridge barrier rails, goods movement improvements, and our ongoing commitment to seismic safety projects.

While the department has made considerable gains in our bridge program, significant work remains. Our 10-year unfunded need for bridge work is \$19 billion, and 926 state bridges remain either distressed or “structurally deficient” as defined by the Federal Highway Administration. Meanwhile, more than 1,000 bridges are “backlogged,” meaning they have been in need of identified repair work for more than two years.

The Meridian Bridge on Highway 20 between Colusa and Sutter counties was built in 1977 to replace an earlier bridge destroyed by fire. The swinging, turntable bridge is temporarily closed once a year for inspection. In this photo, the bridge is pivoted during an inspection, making it look as if the highway drops off.

Inspect, Inspect, Inspect

Caltrans bridge inspectors perform three types of federally required inspections on state and local bridges: routine, fracture critical, and underwater. They conduct these inspections according to national standards, and since 1927, Caltrans engineers have completed more than 742,000 inspections.

During routine inspections, licensed engineers look for signs of distress that could compromise the bridge’s structural integrity. They examine all parts of the bridge, looking for any signs of deterioration and determine if cracks are superficial or more threatening. They document and monitor the bridge’s condition, and if necessary, they recommend repairs. Inspectors may order additional investigation from specialized teams of engineers and technicians.

Bridge specialists conduct fracture critical inspections of steel bridges and underwater bridge piers in waterways. These inspections are designed to detect any loss of strength in steel bridge parts or potential erosion of the bridge’s foundation soil that could cause the bridge to collapse. If inspectors find any issue that could compromise the bridge’s structural integrity, they do whatever it takes to protect public safety. This could mean closing the bridge or posting weight limits until it’s repaired.

Bridge inspection reports are prepared after each inspection and include all inspection information. These reports are maintained for each state, and local bridge in California and provide a living history of each bridge. Today, that library of information contains more than one million documents and gives engineers easy access to the entire structural history of each bridge in the state. The reports also serve as the basis for initiating timely and cost-effective repairs.



Preservation is Critical

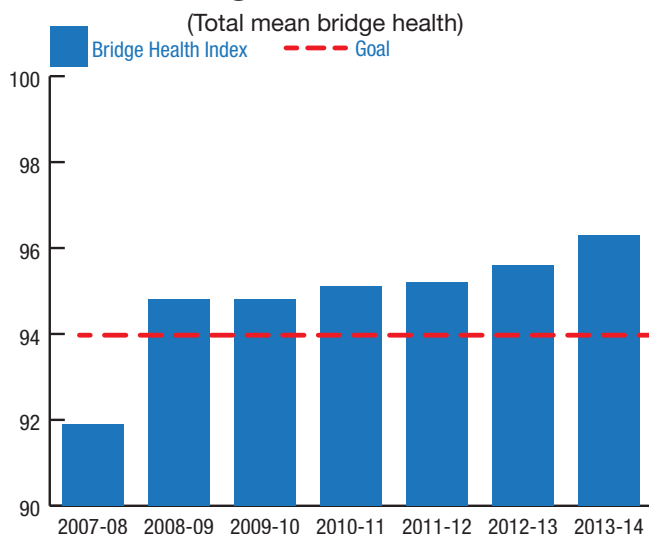
Caltrans bridge and paint crews are in the front of the fight against deterioration and wear. These crews perform minor repairs and preserve steel coating systems on state-owned bridges. Bridge preservation work that is beyond our crews' capabilities is developed into maintenance projects that private construction companies complete. Maintenance projects focus primarily on wearable components of bridges such as overlays, steel coatings, expansion joints, and concrete sealers. Even with good preservation practices, a time comes when bridge rehabilitation or replacement is the most cost-effective action. Bridge rehabilitation or replacement typically takes four to six years to develop, and in complex situations, it can take more than 10 years.

Bridge Health Index

Bridge inspectors measure the overall condition of the state's bridge network through the Bridge Health Index — a number from 0 to 100 that measures the bridge's condition by determining its remaining asset value. A score of 100 indicates a bridge in good condition with full remaining value, and a score of 0 indicates a bridge in poor condition with no remaining value. Our goal is to maintain an average Bridge Health Index of 94.

For fiscal year 2013–14, our average Bridge Health Index for the state highway bridge inventory was 96.3, a slight improvement from 95.6 for fiscal year 2012–13. The health index has shown significant improvement because of our rigorous effort to address bridge issues by providing lower-cost preservation and rehabilitation strategies that slow deterioration and delay costly replacement.

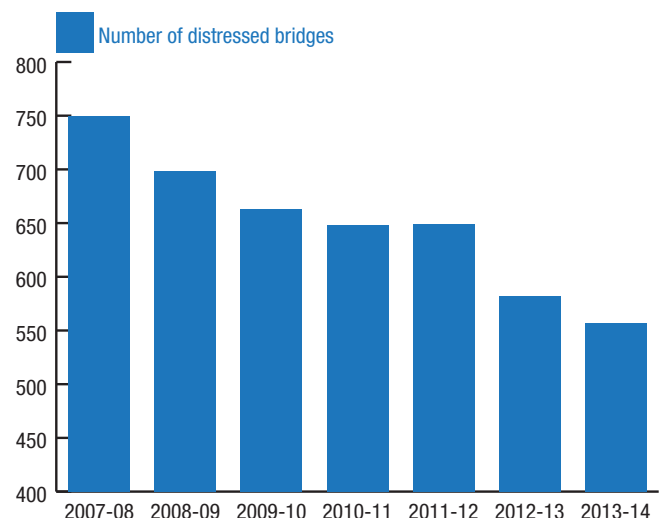
Bridge Health Index



Distressed Bridges

The Bridge Health Index numbers report the condition of the bridges but do not capture other aspects of bridges that we must also manage. A bridge may be in good condition with a high Bridge Health Index but still have a seismic deficiency that we must address in the State Highway Operation and Protection Program. The Bridge Health Index also does not capture concerns such as scour, which is erosion that can undermine the bridge foundation. To capture seismic and scour needs with rehabilitation and replacement needs, we use the "Distressed Bridges" performance measure. A distressed bridge is any bridge a Caltrans inspector identifies as needing major rehabilitation, replacement, scour mitigation, or seismic retrofit.

We are reducing the number of distressed bridges through sustained bridge funding in the State Highway Operation and Protection Program. Over the past six years, the shift of funding from worst-to-first to preservation has resulted in a reduction of 25 percent from 750 to 557 bridges, and achieving our goal of less than 5 percent, or 630, of our bridge inventory being designated as distressed.



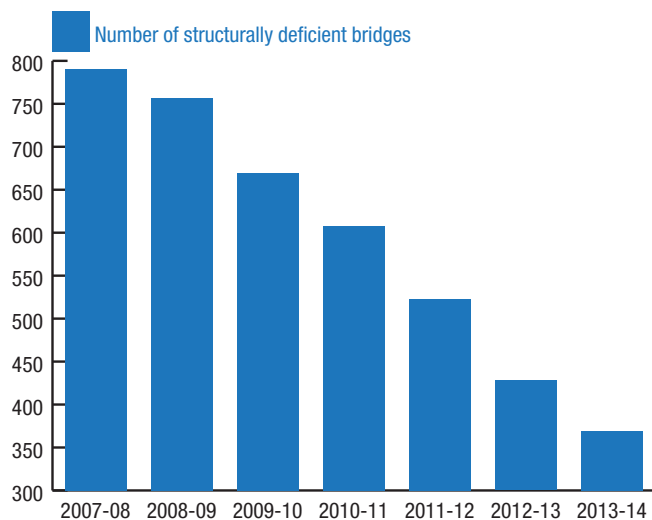
The Bridge Health Index uses numbers from 0 to 100 to measure a bridge's condition by determining its remaining asset value. A bridge with a score of 100 has full remaining value, while a score of 0 indicates a bridge with no remaining value. Since 2008–09, Caltrans has maintained its goal of an overall Bridge Health Index of 94 or greater for state-owned bridges.

A **distressed bridge** is any bridge identified as needing major rehabilitation, replacement, seismic retrofit, or scour mitigation. Scour is erosion that can undermine a bridge's foundation. Since 2007–08, the number of distressed state-owned bridges has steadily declined from 750 to 557.

Structurally Deficient Bridges

“Structurally deficient” does not mean a bridge is unsafe. It is a performance measure defined by the Federal Highway Administration to identify bridges that are eligible for federal funding for repairs or replacement. It could mean that the only thing a bridge needs is a new coat of paint.

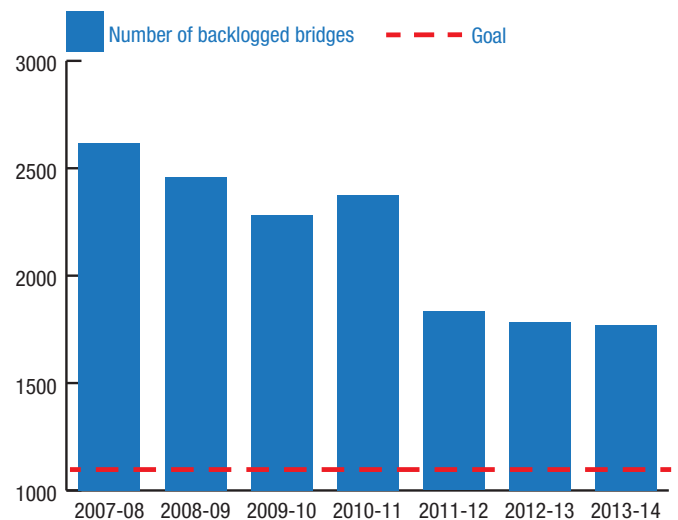
In California, approximately 95 percent of the bridges designated as “structurally deficient” have only minor cracks in the concrete deck or aging paint. Caltrans does not use this measure to make bridge management decisions, but monitors it for the Federal Highway Administration.



“Structurally deficient” does not mean a bridge is unsafe. It is a performance measure the Federal Highway Administration uses to identify bridges eligible for federal funding. Of California’s structurally deficient bridges, 95 percent have only minor cracks in the concrete deck or aging paint. Structurally deficient bridges dropped from 790 in 2007–08 to 369 in 2013–14.

Backlogged Bridges

We also track backlogged recommended bridge repair work. This measure represents state-owned bridges with maintenance contract needs more than 2 years-old. We use this measure to evaluate bridge maintenance performance. The number of bridges with work recommendations more than 2 years-old has been reduced by nearly 900 in the past six years to 1,771. While we’ve made huge progress since 2007–08, we have not yet met our goal of 1,090 or fewer backlogged bridges. All major bridge performance indicators are showing gradual improvement, but the need is great. Caltrans estimates it will cost about \$3.4 billion to keep bridges in good health over the next decade.



A state-owned bridge is considered backlogged if it has recommended repair work that is more than 2 years old. Since 2007–08, the number of **backlogged bridges** has dropped significantly from more than 2,500 to 1,771, but we have not yet met our goal of 1,090 or fewer.

Source: Division of Maintenance



Caltrans workers stand on the Meridian Bridge on Highway 20 between Colusa and Sutter counties during a safety inspection. The swinging, turntable bridge is pivoted open in this photo.

From the Caltrans Archives

Pacific Coast Highway in Santa Monica in 1936



Embracing Technology to Improve Mobility



California developed its highway system during the post-war economic boom a half-century ago. As the state's population and economy grew, so did the highway system. Those days are over. Now we have to use what we have more efficiently.

In 2013, we experienced approximately 300,000 daily vehicle hours of delay across the state, where speeds dropped below 35 miles per hour. By 2023, we estimate delays will increase by 120,000 hours to 420,000 daily hours statewide, a 40 percent increase. Those delays contribute to a loss in the overall state economy, with costs expected to increase from \$1.5 billion to \$2.1 billion annually, while annual carbon dioxide emissions will increase from 1.3 million metric tons to 1.8 million metric tons.

To manage the growing demands on the system, we turn to technological advances in traffic management to increase efficiency, safety, and reliability.

What Is The Transportation Management System?

The transportation management system is a combination of electrical field elements, communications and central applications remotely monitored and controlled from one of our 12 transportation management centers in California. Also known as intelligent transportation systems or ITS, these include ramp meters, traffic signals, vehicle detection stations, changeable message signs, closed-circuit television cameras, highway advisory radios, roadway weather information systems, communication devices, and central traffic management systems.

Knowing the presence, speed, and length of vehicles on the road is critical to effectively manage safety and roadway congestion. We use vehicle detection

sensors in real time to measure traffic volume and adjust traffic light timing at intersections and onramps. We also use them for traveler information systems, such as the changeable message signs on roadways and QuickMap, the web-based interactive map. The collected sensor data helps determine where to invest the limited money available. Thousands of closed-circuit television cameras continuously monitor the roads and provide video feeds to local media outlets and snapshots on QuickMap. We use roadway weather information systems to monitor highway and weather conditions within a region and to prepare for heavy rains and snow plowing.

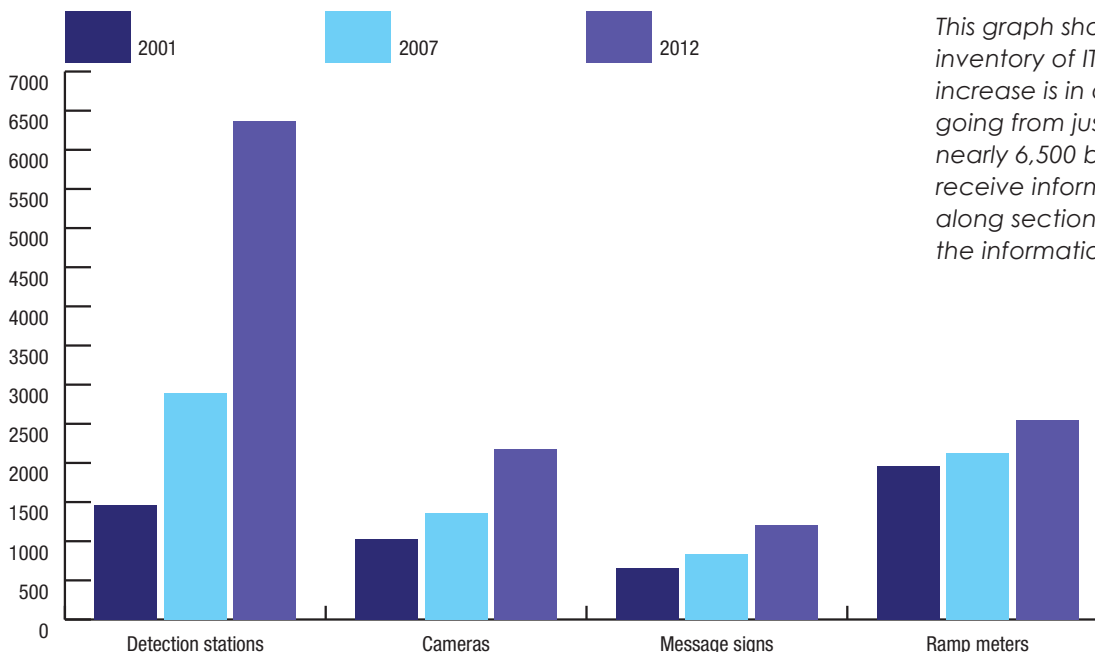
What This Means for the California Motorist

- Cameras help verify incidents 10 minutes faster.
- For every minute faster an incident is cleared, drivers generally save four minutes of delay.
- Changeable message signs warning drivers to use detours due to work zones and collisions can save five to 30 minutes of delay. This also reduces secondary collisions and related delay.
- Accurate traffic data allows construction work to be scheduled so they cause less delay.
- Ramp meters reduce delay by up to 30 percent in some corridors.



In this video, Caltrans Director Malcolm Dougherty visits Caltrans' newest Transportation Management Center in Fontana. He showcases the award-winning LEED center and the technology Caltrans uses around the state to manage California's transportation system. To view the video, visit www.dot.ca.gov/ctjournal/MileMarker/index.html.

Total ITS Elements Added by Year



This graph shows the increase in Caltrans' inventory of ITS elements. The greatest increase is in our detection stations, going from just under 1,500 in 2001 to nearly 6,500 by 2012. Detection stations receive information from traffic detectors along sections of highway, then send the information to transportation

Percentage of Traffic Management Tools in Working Order

		Caltrans District											
ITS Element	Statewide Total %	1	2	3	4	5	6	7	8	9	10	11	12
Vehicle Detection Sensors	66			75	50	63	53	63	61		71	84	82
Camera	87	100	90	92	70	99	71	87	93	100	97	90	98
Changeable Message Sign	89	68	97	96	92	94	87	88	83	100	92	92	82
Highway Radio	86	100	95	89	62		92	100	100	100	100	100	100
Road Weather Station	86	100	65	71			93		100	100	90		
Single-Message Flashers	96	99	100	84	99		100	100	100	97	74		100
Ramp Meters	84			98	80	100	42	74	94		100	95	99

The ITS elements used for traffic management vary, and this table shows the percentage of our operational elements by type. Blank areas have no ITS elements.

Smarter Systems for Better Performance

Modern traffic management systems help us optimize efficiency, safety and reliability — benefits that also reduce air pollution. These systems help us manage traffic, respond quickly to traffic incidents and improve traffic flow. Healthy intelligent transportation systems are systems that work properly. When used on California's roadways, these systems:

- Use existing roads more efficiently and improve traffic flow.
- Lessen overall and peak travel times and make travel times more reliable.
- Improve emergency response and incident clearance time.
- Lower greenhouse gas emissions.
- Reduce vehicle collisions.

Most Components Function Properly

Our transportation management system inventory will continue to evolve. Since 2007, Caltrans and its local partners have installed more than 5,000 additional system elements such as detection stations, cameras, changeable message signs, ramp meters, and central control systems. To date, we have more than 13,000 system elements. Engineers and maintenance crews work to keep this complex system working. Naturally, as the system becomes more complex, maintaining it becomes more challenging. Current staffing levels cannot keep up with the maintenance demand. As the inventory ages, it becomes more difficult to troubleshoot

Copper wire theft is a national epidemic

Losses associated with copper wire theft are estimated at more than \$1 billion annually. Copper wire and metal theft has been a growing problem in California as the price of copper has risen 350 percent over the past five years. Thieves rip out metal and copper wire from lights, signs, metering lights, traffic sensors, and all kinds of equipment and electrical systems. In 2012, Caltrans allocated more than \$50 million for repairs and equipment associated with copper wire theft. When we make repairs, we also install deterrents to prevent future theft.

and keep old elements compatible with the new systems, thus requiring replacement. On average, 87 percent of transportation management system field elements are operational, and 66 percent of our traffic detectors are operational. In addition to an aging infrastructure, numerous challenges, such as construction activity, equipment failure, accidents and copper theft, can cause interruptions in transportation management system performance.

Committed to Increasing System Performance

Investing in replacing and upgrading elements to keep the system in good repair is part of our “fix-it-first” philosophy. Beginning in fiscal year 2015–16, State Highway Operation and Protection Program funds will be invested in upkeep and improvements to the traffic management system. This matters a great deal to Californians because effective traffic management systems reduce the amount of time motorists are stuck in traffic.

Source: Division of Traffic Operations

Fatalities on State Highway System Still Dropping

One traffic-related fatality is too many. That's why agencies and organizations across the nation are working to increase safety awareness for all travelers — whether they're drivers, cyclists or pedestrians. These efforts to educate the public are paying off. Traffic deaths have dropped significantly over time.



In this video, the "See and Be Seen" campaign gives safety reminders to drivers, cyclists, and pedestrians. To view the video, visit www.dot.ca.gov/ctjournal/MileMarker/index.html.

The California Highway Patrol reports that in 2012, California had the lowest number of fatal collisions since 1945. Fatal accidents on the state highway system in 2012 were 0.61 for every 100 million vehicles miles traveled which is below the state goal of 1.0.

Regular Reminders for Drivers

Caltrans, in coordination with the California Highway Patrol and the California Office of Traffic Safety, often uses highway message signs to remind drivers what to do in a crash, warn against drunk and distracted driving, and give alerts about highway work zones.



Highway Work: A Dangerous Job

Highway construction and maintenance are among the most dangerous jobs in California. Since the 1920s, 183 Caltrans employees have been killed on the job. On average, 1,000 Caltrans vehicles are struck each year — almost three each day.

Over the years, Caltrans' various public campaigns have helped reduce the number of traffic-related deaths to both highway workers and the traveling public. Following the success of California's "Slow for the Cone Zone" public awareness campaign, Caltrans, in partnership with the California Office of Traffic Safety and California Highway Patrol, began asking drivers to "Be Work Zone Alert" and help save lives on California's roads.

The "Be Work Zone Alert" campaign seeks to make an emotional connection with motorists by reminding them that highway workers are much more than a blur on the roadside. They are mothers and fathers, sisters and brothers — they are people whose lives matter. The campaign features the real children of real Caltrans workers. Their message is simple: they want their parents to come home at the end of the work day. The campaign includes public service announcements and nearly 60 billboards across California. This effort is funded with highway maintenance funds and a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

Protecting all Highway Travelers

Highway workers, of course, are not the only ones who face risks on our highways. Caltrans strives

to ensure the safety of everyone traveling on the highway system, whether they're in a truck, a car, or, with increasing frequency, on a bicycle or on foot. The 2010–12 California Household Travel Survey showed that more than twice as many people chose to walk and bike to their destinations than during the previous decade, jumping from 11 percent in the 2000 survey to nearly 23 percent in the 2010–12 survey.

Overall, fatal accidents on the state highway system have dropped about 43 percent during the 10-year period of 2003 to 2012, from 1.08 to 0.61 for every 100 million vehicle miles traveled. Fatal accidents involving pedestrians and bicyclists, however, have increased. In 2003, pedestrian and cyclists made up 14.26 percent of fatal accidents and that number gradually climbed to 19.76 percent in 2012. We are seeing a dramatic shift in the way people choose to travel, and in response we are working to make sure that the highway system is safe for all travelers.

One way we deliver the message of highway safety is the "See and Be Seen" campaign, which features TV, radio, and print outreach. It is aimed at travelers along State Route 273. The route begins just south of the city of Anderson in Shasta County and runs parallel to Interstate 5 to the city of Redding. It borders many agricultural fields in Anderson, a large casino in Redding, and runs past Shasta County's only homeless shelter. In the last five years, State Route 273 has seen 15 pedestrian or bicycle-related collisions. Three were fatal.

With our traffic safety partners, we are continuing our work toward zero traffic-related deaths on California's highways so we can create a system that integrates safety and sustainability for all travelers.

Source: Caltrans District 2 and the Division of Research, Innovation, and System Information

The "Be Work Zone Alert" public service announcement features the children of Caltrans employees. The children ask that drivers help make sure their parents come home safely at the end of the workday. You can view the video at www.dot.ca.gov/ctjournal/MileMarker/index.html.



Trade Corridor Improvement Fund Benefits Over 80 Projects

In 2006, California voters approved Proposition 1B to invest nearly \$20 billion in the state's congested transportation system. The Trade Corridors Improvement Fund (TCIF) used \$2 billion of that money, along with other government and private funds, to improve the state's seaports, railroads, grade separations and roads.

Freight transportation plays a critical role in California's economy, generating 1.3 million jobs and moving about 40 percent of the nation's internationally traded consumer goods. Moving freight more efficiently reduces the industry's carbon footprint while keeping California competitive in the global marketplace.

One-Third of Projects Expected to be Complete in 2015

In 2008, the California Transportation Commission adopted the initial set of projects, many of which were identified in the state's 2007 *Goods Movement Action Plan*. The projects were concentrated along high-priority freight corridors.

The TCIF program now includes 81 projects with a total estimated value of \$7.2 billion. Thirteen of those projects are complete and another 14 should be done this summer. Several projects were completed at a lower cost than originally projected, freeing up \$336 million to be reinvested in further improvements. It is possible that more savings will be available as projects are completed.

How the Projects Were Chosen

Rather than distributing limited TCIF money evenly across the state, the Commission focused on the busiest freight corridors. Regional agencies within those corridors created coalitions to prioritize and select projects and to manage TCIF money.

Trade corridor improvement projects are funded by single or multiple sources in addition to the TCIF. Much of the investment in freight infrastructure has come from the private sector. Private rail lines almost exclusively own and operate freight rail. The TCIF program brought funding sources together to deliver an impressive and effective set of projects. If another state or federal freight-funding program becomes available, we expect the *California Freight Mobility Plan* will provide similar results.

The Long Beach–Los Angeles port complex ranks as the world's sixth busiest, based on combined shipped cargo containers.

What's Next?

The nontraditional roles and partnerships required to deliver the TCIF projects made it necessary for the partners to define new ways of working together for a successful program, something that will be needed when new funding becomes available.

At first, TCIF guidelines required all the projects to be under construction by December 31, 2013. This deadline proved unrealistic. In keeping with the old adage that haste makes waste, the Commission extended the program to December 31, 2016, so that there is time for thorough analysis to ensure that the money is invested wisely on the best and most effective projects.

In September 2014, Gov. Jerry Brown signed Senate Bill 1228. This continues the TCIF for the purpose of receiving and using revenue from sources other than Proposition 1B. The bill, however, did not provide further revenue for the program. Any new revenue would be allocated by the Commission for similar TCIF purposes, such as infrastructure improvements, specifically those that benefit the state's land ports of entry.

Over the next year, we will be building upon the program by preparing to address expected additional federal guidance under MAP21 and the possibility of new federal funding for freight projects. We will work with stakeholders to give more details on the benefits of individual completed projects and the benefits from the corridor perspective. Additionally, working through the California Freight Advisory Committee and in consultation with the California Air Resources Board, we will continue discussions on how best to categorize and prioritize the 700 plus projects identified in the California Freight Mobility Plan.

Source: Division of Transportation Planning

Colton Crossing was one of the nation's most congested rail intersections, until an overpass project separated the mainline tracks of the Union Pacific Railroad and those of the BNSF Railway.

Notable TCIF Projects

Colton Crossing rail-to-rail grade separation project separated the mainline tracks of the Union Pacific Railroad and BNSF Railway in San Bernardino County, which was one of the most congested rail intersections in the country, and will reduce local traffic congestion and improve the quality of life for area residents.

The Gerald Desmond replacement bridge in the Port of Long Beach, which is a vital link in the nation's trade system, will allow passage of the world's largest cargo ships under the new bridge. It also will have better capacity for trucks, while also serving bicyclists and pedestrians.

Tehachapi railroad capacity expansion project in Kern County is a public-private partnership between Caltrans and BNSF Railway that will provide additional track through the Tehachapi Pass — the primary freight rail connector from the San Joaquin Valley to the Southwest U.S. and points farther east.

San Gabriel Valley grade separation program in Los Angeles County is eliminating numerous at-grade railroad crossings along the Alameda Corridor East, eliminating traffic delays at those crossings, improving safety and enhancing community health.

Outer Harbor intermodal terminals in Oakland will improve rail access and marine bulk terminals, thereby increasing export volume of California's products and reducing the need for truck trips on congested Bay Area freeways.

State Route 11 Corridor and Otay Mesa East Port Of Entry will improve the movement of goods, services and people across the U.S./Mexican border in the San Diego region. The project will reduce delays and emissions from vehicles waiting to cross the border, particularly from diesel engines. Delays represent a loss of more than \$7 billion per year to the two nations' economies.



LED Lighting

Savings We Will Reinvest

Caltrans is committed to “green” building practices and reducing energy in its state-owned buildings. Executive Order B-18-12 requires state agencies to reduce grid-based energy purchases for state-owned buildings by at least 20 percent by 2018. The executive order also requires state agencies to “purchase and use environmentally preferable products that have a lesser or reduced effect on human health and the environment.” That’s why Caltrans replaced fluorescent light bulbs in its Sacramento headquarters building with new LED tubes that will help us meet the governor’s executive order of saving energy — and taxpayer money.

Caltrans spends about \$485,000 a year in energy for its headquarters building alone. The Sacramento Municipal Utility District (SMUD) estimated that replacing the old 4-foot fluorescent light tubes with LED tubes will save at least \$41,000 — or 8.5 percent — a year in energy costs. The LED tube replacement project cost about \$305,000. In January 2015, SMUD gave Caltrans a \$135,000 rebate for its purchase of the new LED tubes. The lights should pay for themselves with cost savings in less than four years.

LED Safer, Cheaper and Environmentally Friendly

The Caltrans headquarters building is about 450,000 square feet. It was first constructed in 1936 with additional buildings added in the 1950s and 60s. Most of our lighting fixtures use fluorescent lights. Fluorescent light tubes are made of glass and contain mercury. If the glass tubes break, people can be exposed to illness or injury. As of 2012, federal law no longer allows U.S. companies to make or import fluorescent light tubes. When existing supplies are gone, they will no longer be available.



Director Malcolm Dougherty accepts a rebate check from SMUD Board President Rob Kerth.

LED tubes are unbreakable, fit in the existing sockets and reduce energy use from 40 watts per fluorescent tube to 17 and don’t have to be replaced as often as fluorescents. The LED tubes are also guaranteed for five years and all of the parts can be safely recycled.

The LED tubes used in this project were manufactured in California and were purchased through a certified woman-owned small business.

The Next Phase

While the SMUD rebate only applied to the 4-foot, more predominant fluorescent lighting, Caltrans has begun a cost analysis on replacing the 2-foot and 8-foot fluorescent tubes, which may require some rewiring or replacing of fixtures. Efforts to retrofit Caltrans-owned office buildings across the state are ongoing. Our goal is to retrofit all of our light tubes in a safe, sustainable, and cost-efficient way.

Source: The Division of Business, Facilities and Security

Caltrans Districts

Edmund G. Brown Jr.
Governor
State of California

Brian P. Kelly
Secretary
California State
Transportation Agency

Malcolm Dougherty
Caltrans Director

Kome Ajise
Caltrans Chief Deputy Director

Will Shuck
Deputy Director
Caltrans External Affairs

Tamie McGowen
Assistant Deputy Director
Caltrans Public Affairs

Matt Rocco
Office Chief
Caltrans Public Affairs

Anne Gezi
Mile Marker Project Manager

All video provided by or edited
by Caltrans videographer
Jim O'Brien

All photography provided
by Caltrans photographers
unless otherwise noted.

William Hall
John Huseby
Steven Hellon
Scott Lorenzo

For individuals with sensory
disabilities, this document is
available in alternative formats.
For information, call (916) 654-2808
(Voice) or 711 (TTY) or write:

Susan Montoya-Barrett
Caltrans Public Affairs
1120 N Street, MS-49
Sacramento, CA 95814



For more information on Caltrans, please visit the following links:

California Department of Transportation
<http://www.dot.ca.gov>

Mile Marker Archives
<http://www.dot.ca.gov/ctjournal/MileMarker/index.html>

QuickMap
<http://quickmap.dot.ca.gov>

Mission, Vision, Goals
<http://www.dot.ca.gov/hq/paffairs/about/mission.htm>

Caltrans Social Media
<http://www.dot.ca.gov/socialmedia>

Reports to the California Legislature
<http://www.dot.ca.gov/reports-legislature.htm>

2013 10-Year SHOPP Plan
http://www.dot.ca.gov/hq/transprog/SHOPP/prior_shopp_documents/10yr_SHOPP_Plan/2013_Ten_Year_SHOPP_Plan.pdf

Division of Maintenance
<http://www.dot.ca.gov/hq/maint>

Complete Streets Program
http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

Smart Mobility Framework
<http://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html>

Freight Mobility Plan
http://www.dot.ca.gov/hq/tpp/offices/ogm/california_freight_mobility_plan.html

Good Movement Action Plan
http://www.dot.ca.gov/hq/tpp/offices/ogm/links_files/gmap-1-11-07.pdf



California Department of Transportation

© 2015 California Department of Transportation - All rights reserved.

